ARNAV KUMAR

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Education

- Graduate: **Carnegie Mellon University**, Pittsburgh, PA   (Aug 2017 - Dec 2018 (Expected))
  - Master of Science in Intelligent Information Systems
- Undergraduate: **Nanyang Technological University**, Singapore   (Aug 2010 – Jun 2014)
  - Bachelor of Engineering (Honours) in Computer Science with a GPA of **4.78/5**.
  - Specialization in Intelligent Systems, Minor in Business.
  - **Dean's List** - Academic Year 2012-13, Academic Year 2013-14
  - Awarded President's Research Scholarship - offered to the top 5% of the cohort - Academic Year 2011-12
  - Awarded full scholarship for university education.
- High School: **St. James' School**, Kolkata, India   (Graduated in May 2010)

Employment History

- **Zendesk, Inc.** - *Senior Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore   (Jul 2016 - Aug 2017)
- **Zendesk, Inc.** - *Software Engineer, Zendesk Chat (Backend/Platform)*, Singapore   (Jul 2014 - Jul 2016)
  - *Engineering Lead* for the internal **push-notification microservice**: Re-wrote session management logic, architected new systems and infrastructure to support robust push notification delivery.
  - *Engineering Lead* for the internal microservice for **feature entitlement**, gating and staggered rollout.
  - *Engineering Lead* for **billing integration** with the shared billing service, replacing legacy systems, and mass migrating customers to the new system.
  - *Public Rest API* - Worked on v1.0 of the Zendesk Chat public REST API.
    * Wrote the view transformation layer to transform internal data models into publicly consumable data,
    * Developed internal structure for authorization checks
  - *Live Chat Servers* - Worked on various iterations of the application that powers live chat, working on features like REST API for ongoing chats, support for concurrent sessions, low-level protocol enhancements etc.
  - *Event Framework* - Wrote the event framework that produces product-wide events to Kafka. Some were piped via a pool of Logstash servers depending on importance and volume.
  - *Webhooks* - Developed delivery and retry mechanism for payload delivery.
  - *Test Framework* - Made several improvements to the unit test suite: improvements to the test suite lifecycle, increased coverage and heavily reduced suite run-times with micro-optimizations.
  - *Miscellanous Responsibilites* - Development environments, staging servers, CI setup, hiring, mentoring, etc.
    Technologies Used - Python, Django, Flask, Celery, Nose, JavaScript, Node, Redis & Redis Cluster, Memcached, Kafka, Logstash, MySQL, Docker, etc.
- **IBM Corporation** - *Software Engineering Intern*, Singapore   (May 2013 - Aug 2013)
- **IBM Corporation** - *Software Engineering Intern*, Singapore   (Jun 2012 - Dec 2012)
  - Developed core components for a mobile port of IBM Security Access Manager for Enterprise Single Sign-On, ISAM-ESSOm, for providing single sign-on capabilities on the iOS platform.
  - Built the fully-featured, UIWebView-based embedded browser which provides single sign-on capabilities.

Open Source Contributions (Selected)

- **TwitterCLDR** - Regular contributor to Twitter's open source JavaScript implementation of the ICU (International Components for Unicode) that uses the Common Locale Data Repository to format dates, plurals, and more. Implemented features such as Text Segmentation, Unicode Regex Parser, Rule-based number formatting etc.
- **raven-python** - Added support for capture-sampling per message. Added support for logging filters, and logging exclusions when used with Flask.
- **txconnpool** - Added support to create a connection pool to a pool of servers rather than just 1.
- **blinker** - Added support for sending signals without propagating resulting exceptions and support for connecting via multiple objects in a single decorator.

Other Projects (Selected)

- **Virtual Interaction with Physical Objects Using Kinect and iPhone** - *Final Year Project* - Interfacing a Kinect, an iPhone, and a projector with a central server to process motion to demonstrate virtual interaction with real objects.
- **Facebook Search** - *Information Retrieval* - App to perform full text search on a user's post history.
- **Twitter Visualizer** - *Data Mining* - App to generate a timeline for the worldwide flow of hashtags and track local trends.
- **Twitter Summarizer** - *NLP* - An app to summarise information on a topic by extracting descriptive phrases from tweets.
- **dBauggle** - *Software Engineering* - iOS word-game for children with special needs, built with cocos2d.
- **Pebble Music Tweeter** - *Hobby* - Pebble Watchapp + companion iOS app using the Twitter API and Pebble SDK to Tweet the currently playing music from the smartwatch.

Technical Skills

- Languages: Comptetent: Python. Previously used: Javascript, CoffeeScript, Java, Objective-C, and others.
- Technologies (miscellaneous): Django, Flask, Celery, Nose, Node, Jasmine, Redis, Redis Cluster, Memcached, MySQL, Kafka, Docker, Logstash etc.
- Represented NTU in International Collegiate Programming Competition (ACM-ICPC) Regionals, Kuala Lumpur.   (2011)

Extra-Curricular Activities (University)

- **NTU Open Source Society**   (Aug 2010 - May 2014)
  - **President** in AY2012-13, **Vice-President** in AY2011-12
  - Headed the management committee of the resident hacker-club that hosted weekly workshops, recruitment events and promoted technology on the campus.
  - Organised various workshops (& presented a few), recruitments events and Ubuntu release parties.
- **IT & Media Officer - Computer Engineering Club** (**Students' Council**)   (Sept 2012 - Aug 2013)
  - Steered the annual branding initiative, produced and redesigned the School's publication and organised the school's first Hackathon. (AY2012-13)
- **Layout Editor - The Tribune**, Official Campus Newspaper   (Sept 2011 - Aug 2012)
  - Led a rebranding initiative and major redesign of the newspaper, leading to 2x increase in readership and distribution.

Interests

- Reading, Writing, Podcasts, Music, Sports (football, rugby, cricket).
- Played Rugby competitively for 8 years.
- Member of the NTU Rugby Squad (Sept 2010 - Aug 2011).